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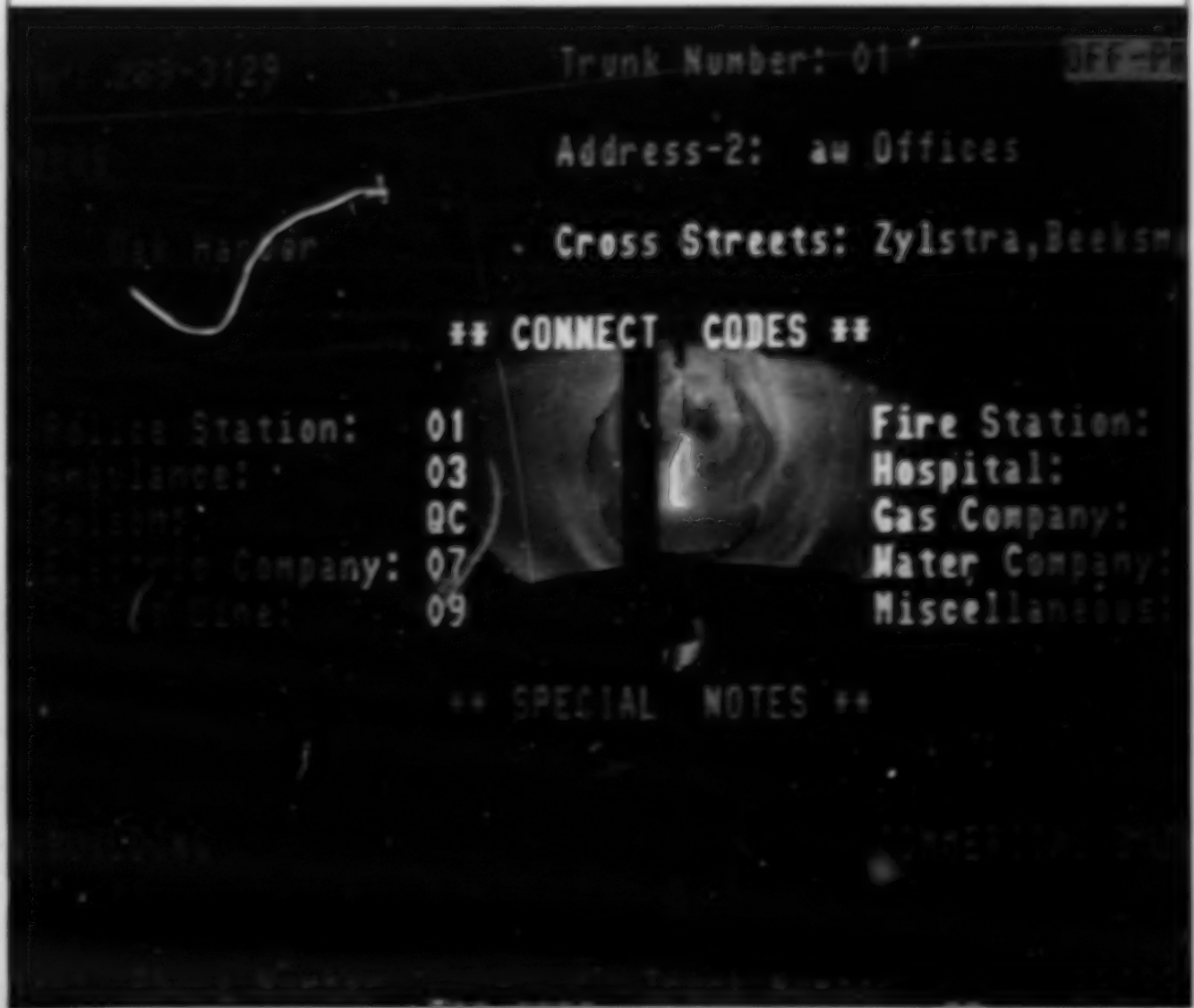

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Published by TELEPHONY PUBLISHING CORP., 55 E. Jackson, Chicago, IL 60604
Telephone 312/922-2435; TWX 910 221 1058

European Bureau, 136 Broomfield Rd., Chelmsford, Essex CM1 1RN, England; Telephone Chelmsford (0245) 58257; Telex 995801 GLOTLX-G.

TELEPHONY (ISSN 0040-2656) + $1.50) is published weekly by Telephony Publishing Corp. Officers of Telephony Publishing Corp. are Dan S. Fargo, President; Lee Anderson, Executive Vice President; Del Myers, Robert Weboski and James R. Drummond, Vice Presidents. Postmaster: Please send form 3579 to Subscription Dept. TELEPHONY, 55 E. Jackson Blvd., Chicago, IL 60604. Second class postage paid at Chicago, Ill., and at additional mailing offices. Single copies (payable in advance) U.S. $3.00 ea. Outside U.S. add $1.00 ea. Subscriptions: $35 one year. Outside U.S. $59 per year. Subscription rates apply to employees of operating telephone companies; telephone consultants; contractors; interconnect companies; specialized common carriers; military government associations; private communications users; schools; libraries. All others $39 one year. Outside U.S. $65 per year. Change of address: include old address as well as new address. Attach issue label if possible. Allow 4 weeks for change to become effective. Copyright 1985 by Telephony Publishing Corp. Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by Telephony Publishing Corp. for libraries and other users registered with the Copyright Clearance Center (CCC) provided that the fee of $1.50 per page is paid directly to CCC, 21 Congress St., Salem, MA 01970. Special requests should be addressed to Telephony Publishing Corp.

Stabilizing the volatile telephone instrument market

Manufacturers and retailers both are operating on razor thin margins. They must emphasize quality and service, and further educate customers about the products

RICHARD A. LINDENMUTH

IT WAS a relief to see 1984 end. For the consumer telephone industry, 1984 was not a good year despite the fact that factory sales of telephone units last year increased 54% to an estimated $1.25 billion.

The past year was the first full year of deregulation. It certainly was a year notable for its rough and tumble competition, but it is not clear who, if anyone, really benefitted. The regional Bell operating companies burst on the scene and it was a year in which a very few firms in the consumer telephone industry made some small profits on telephones. Many more firms lost money and most firms in the consumer telephone industry are just now climbing out from under the burden of huge inventories and tiny, shrinking profit margins.

Finally, 1984 was a year of confusion in the residential telephone market which hopefully taught everyone a lesson: Consumer preference in telephones is market-driven, not manufacturer- or retailer-driven. Consumers want quality and gadgets, but not too many gadgets, and they want everything at a price they have come to expect as their due for making the jump from leased to purchased telephones. That may be a selfish position but it is not an unexpected one.

'The reason so many telephone vendors and retailers are in trouble today is that they misjudged the tenacity and power of AT&T and the voracious appetites of offshore manufacturers seeking a large bite of the U.S. residential telephone market.'

And therein lies the problem.

But what does the market look like? Table I has some interesting statistics. If the statistics prove to be accurate, the industry will have a decent but not a spectacular year in 1985. But not all of the market confusion will disappear in 1985.

Where does all this leave the industry as it heads into the second half of the '80s? There is no longer any doubt about the retail acumen of the largest competitor in the market, American Telephone & Telegraph Co. (AT&T). AT&T is a tough competitor. It is ready, willing and able to improve its market share in 1984 and 1985, and to regain and add to the market share lost during 1982 and 1983 when several competitors were breathing down AT&T's neck.

The reason so many telephone vendors and retailers are in trouble today is that they misjudged the tenacity and power of AT&T and the voracious appetites of offshore manufacturers seeking a large bite of the U.S. residential telephone market. Imports rose from 500,000 units in 1982 to 17 million units in mid-1983 to 34 million units by early 1984. That is more than the entire volume of domestic sales in 1984. This influx would not have been so bad if it had not fomented such consumer disillusionment with purchased telephones in general. In fact, consumer dissatisfaction with poor quality, one-piece phones in 1983 drove many consumers back to basic phones in 1984. (Some good estimates place the basic phones' share of the 1984 market a 60% of the total.)

This development is good and bad

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because many of those same manufacturers of low quality, one-piece telephones are now in the traditional phone market. Consumers who are looking for a traditional phone may wind up with a cheap imitation. Consumers who have not already made the final break with their leased phone consequently may be reluctant.

The leased residential telephone market remains substantial. An estimated 45% of households already own and another 10% plan to purchase their phones, but that leaves about 35% of the market to leased phones.

Adjustments

What are the implications of this back to basics move for retailers and suppliers? The key to success for retailers is to develop solid relationships with quality manufacturers. At the same time, it is incumbent on the manufacturers to make their basic phone prices competitive and to continue to develop feature phones and cordless products which address the consumer's desire for convenience and novelty. Neither task will be easy.

Residential telephone market realities today are sobering. True, inventories are down to more acceptable levels at retail and at the manufacturing level. But price points are distressed. The average value per unit fell to $41 from $47 in 1983, and is expected to decline to $40 in 1985. Low prices and the desire for quality are mutually exclusive.

The hard, cold facts are that the mean time to failure (MTTF) of basic Western Electric or ITT telephones is 7 years to 8 years and the cost of building that MTTF into the products is very close to the price required by current market realities. Margins are razor thin for manufacturers and retailers alike. In order for manufacturers to make a profit, production costs must be cut. This will lead to a degradation in quality of basic telephones. Basic telephones simply will not last 20 years anymore.

The onus is on both suppliers and retailers to make the consumer aware of this tradeoff. Consumers must realize that they can still have quality with fair prices. But they should not continue to expect infinite quality and durability, especially since they also have come to expect such features as last number redial, autodial and, increasingly, one-button access to 911 emergency numbers.

The consumer telephone industry—both manufacturers and retailers—must work to stabilize the residential telephone market. But the industry cannot stabilize the market solely through its own exertions. Ultimately, only the consumer can stabilize the residential market.

The industry can help, however, and a good starting point is to begin sending clear, coherent messages to the consumer. Specifically, the industry must stop selling only on price. It must sell on the basis of quality and price. The industry must inform and guide the consumer.

The consumer must be encouraged to make an informed choice.

There are simply too many choices there today for the average person to make an intelligent buying decision. Dumb buying decisions—if the industry is perceived as having promoted them through its advertising or other marketing strategies—will come back to haunt the industry. In the short run, misinformation may move phones, but in the long term it can only delay the development of a mature, stable residential telephone market that yields a fair return on investment. And everyone in the industry wants that kind of a market to develop.

Table 1
Telephones/answering devices

Cordless telephones

	Total sales to dealers in units (thousands)	Total factory sales in dollars (millions)	Average value (dollars per unit)
1982	2000	200	100
1983	4700	400	85
1984	6300	460	73
1985	6200	445	72

Corded telephones

	Total sales to dealers in units (thousands)	Total factory sales in dollars (millions)	Average value (dollars per unit)
1982	3700	200	54
1983	15,000	525	35
1984	24,000	790	33
1985	28,000	925	33

Total telephones

	Total sales to dealers in units (thousands)	Total factory sales in dollars (millions)	Average value (dollars per unit)
1982	5700	400	70
1983	19,700	925	47
1984	30,300	1250	41
1985	34,200	1370	40

Telephone answering devices

	Total sales to dealers in units (thousands)	Total factory sales in dollars (millions)	Average value (dollars per unit)
1982	850	110	129
1983	2200	190	86
1984	3000	230	77
1985	4000	305	76

Data reflected in this table has been developed from input provided by EIA/CEG Marketing Services Committee members, other companies in the industry, and outside research firms. These figures are not derived from regular EIA Marketing Services Dept. reporting programs. Research firms providing data were: Frost & Sullivan, International Competitive Assessments, Venture Development Corp. and The Yankee Group.

The business market

The business market is a large market which is quite distinct from the residential market. The nature of business telecommunications is changing very rapidly. The changes are creating new markets and marketing opportunities.

Telephone communications are

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being integrated into information data exchange systems. Telecommunications and computing are merging into a huge, untapped market.

Twenty million households, or 25% of all U.S. homes, are categorized as home businesses. Firms which have been in the business telephone market know there are big sales and respectable margins to be made in key systems. The market for small, easily installed electronic key systems today is worth more than $1 billion at retail prices. In other words, the key system market is nearly as big as the residential phone market.

Nor is it difficult to evolve from being a telephone retailer to retailer and interconnect company. Many telephone retailers already have made the transition. All it requires is a good supplier or two, some sales expertise, and a repair and sevice capability. These three requirements may seem like they demand too much investment for the small specialty retailer and it is true that going into the interconnect business does involve a certain element of risk.

But vendors will help retailers sell 2 line phones and 6 line by 16 station key systems. The sad, worst case alternative for retailers is to settle for continued low margins and residential telephones interspersed with short boom periods as consumers replace their existing phones.

Retailers, therefore, should get into the small business market. Many suppliers are already in the market, having come from either telephony or retail-consumer businesses. Furthermore, many retailers already know both sides of the business.

Undue pessimism, like uncontrolled optimism, is unwarranted. The telephone has the potential to parallel sales of radios, and radios year in and year out rack up sales of 40 million units. Currently, the number of phones per household stands at approximately 1.7. If that figure increases to just 2.2 phones per household, there will be an additional market demand of 40 million telephones.

There will not be a market demand of 40 million telephones this year or next, but gradually that huge market will develop.

When this incremental residential potential is combined with the potential of the business market, which by its nature will be more profitable, there is room for retailers and suppliers alike which are smart enough to help stabilize the telephone business. □

The dollars in the bypass dilemma

CARL THORSEN

CHANGES IN the Bell System, the regulatory environment and public attitudes toward telephone rates suggest this may be the right time to re-examine the principles that have guided toll service ratemaking over past decades.

Recently, much attention—including the attention given to Docket 78-72 of the Federal Communications Commission (FCC)—has been focused on the threat of bypass, particularly uneconomic bypass caused by the recovery of large amounts of non-traffic sensitive (NTS) costs in message toll usage prices. There is no doubt about the importance of this issue.

But it appears the questioning that has been going on has failed to focus on a key point: the possibility that the toll rate structure may be aggravating the problem of uneconomic bypass.

Today, traditional ratemaking concepts should be examined. Are toll prices economically justifiable and sustainable, given traffic characteristics, costs and their allocations and demand elasticities? And, pending FCC decisions on applying further end user charges, should alternative means be sought to address the uneconomic bypass threat?

In the face of bypass, competition and the need for sustainable prices, the Bell operating companies (BOCs)—and American Telephone & Telegraph Co. (AT&T), since it, too, provides toll services under a similar rate structure to the operating companies—should carefully consider some key questions and, perhaps, if is merited, break with tradition in the future pricing of message toll services. Specifically:

- How is NTS cost currently recovered in day, evening and night rates?
- How is NTS cost currently recovered from each toll mileage band (or group of bands such as short, medium or long haul) for the three rate periods?
- Are the current day, evening and night rate periods properly related to current or forecast traffic patterns and costs?
- Are the current 40% and 60% off-peak discounts optimal?
- Do the current toll rate structures and discount periods properly recover traffic sensitive day, evening and night rate period costs?
- To what extent, if any, should access fees be peak-related and how should the peak be defined: nationwide, company, local access and transport area (LATA), end office?
- Should access fees distinguish set up and holding time costs?
- What is the impact of the current access fee rate structure on the current toll schedule?
- What are the elasticities of demand by time of day, class of customer and initial period versus holding time?

Toll pricing issues

Although it may be easy to specify what portion of costs are traffic sensitive, defining the peak is another matter. In fact, the Bell System may have been misnamed from a peak-pricing standpoint: It was always more a huge collection of individual parts or exchanges with distinct operating characteristics in terms of load factors and peak calling times, that it was a unified system. This is just as true today as it was before divestiture.

However, AT&T is now more of a system than the BOCs, which comprise thousands of central offices. From point of presence (POP) to POP, AT&T has great opportunities to concentrate traffic and ensure full switching and load balancing.

Extensive alternate routing provides further load balancing potential. Extensive alternate routing is unavailable to local Class 5 offices

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and only slightly available in the intra-LATA networks. Serving four time zones also increases the hours AT&T can use switching and transmission facilities.

Due to AT&T's operating characteristics, there may be no true peak. But during the day and evening, load is fairly level from POP to POP. From a cost standpoint, this pattern does not favor discounts after 5 p.m. The need to review off-peak rate periods and off-peak discounts is further strengthened in light of non-peak related access fees that now represent local rather than system characteristics.

Despite the fact that many, if not most, central offices peak between 5 p.m. and 10 p.m., a system view leads to the historic notion of offering price discounts after 5 p.m. and on weekends. This causes two major problems from a system perspective. First, it misdirects price signals to customers, primarily telling residence users to make evening and night calls. Second, and most important, it allocates some traffic sensitive evening peak office costs to day toll rates.

So, daytime users—primarily business customers—are assuming more than their own capacity costs. New York Telephone's new local calling peak period of 9 a.m. to 9 p.m. recognizes that peak conditions are occurring throughout the system in individual end offices.

The pricing-usage imbalance is important because the same switches carry intra-LATA calls and calls to access inter-LATA toll carriers. Implicit differences between system-wide traffic sensitive cost apportionment and office by office or class of customer costs call into question the traditional toll rate discount periods.

Compounding the threat

Two larger reasons may be aggravating the uneconomic bypass threat. They are the disproportionate recovery of NTS costs between residence and business customers and the construction of too much distance sensitivity in toll rates. An operating company study of 1983-84 pre-divestiture intrastate toll characteristics shows that day calls make a far greater contribution to net revenue than evening or night calls (Table 1).

Thus, uneconomic bypass is spurred by the disproportionate burden placed on daytime prices in the rate structure's contribution spread. Contribution per minute of use also adds to uneconomic bypass with uneven distribution among toll users.

Elasticities of demand may call for uneven recovery of costs and contribution. But it is far from clear that the focus and level of any recovery bias is related to demand, either before or after divestiture.

In fact, elasticity considerations, as reflected by the rule of inverse elasticity (or Ramsey pricing), are the only rationale for disproportionate recovery of NTS costs. Yet, it does not appear sustainable to load these costs onto daytime business traffic, the area most susceptible to bypass. This disproportionate recovery of NTS costs also is crucial in determining the true financial consequences of bypass or loss of market share, since loss of day traffic would inflict a greater financial toll than loss of evening traffic.

The current rate structure also may be contributing to uneconomic bypass by recovering a greater portion of NTS costs in the longer distance calling bands than in the short haul, as Table 2 indicates. Table 2 is based on the operating company study mentioned in connection with Table 1.

The complex issues surrounding the need to deaverage rates among geographic areas and long distance routes are causing wide discussion in the industry. Certainly, it is an area that will require action in the future. But for the moment it seems there is more to be gained by addressing the problems surrounding the average rate schedules.

The significance of this issue should not be underplayed. The BOCs and AT&T can file tariffs on

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Table 1

Time and money: average contribution per message and minute

Rate period	Revenue requirement per message	Revenue per message	Contribution above cost per message
Day	50.6¢	$1.22	71.4¢
Evening	84.2	1.30	45.8
Night	20.4	0.72	51.6

	Contribution per message	Holding time per message	Contribution per minute
Day	71.4¢	3.8846 mins.	18.38¢
Evening	45.8	7.4931	6.11
Night	51.6	6.4818	7.96

Table 2

Contribution of day period calls by distance

	Per message			Per minute	
Mileage	Cost	Revenue	Contribution	Average holding time	Average contribution
0 to 8	$ 0.335	$ 0.28	$ (0.055)	3.3409	$ (0.0165)
9 to 10	0.332	0.42	0.088	3.4336	0.0256
11 to 16	0.420	0.58	0.160	3.6086	0.0443
17 to 22	0.374	0.77	0.396	3.6818	0.1075
23 to 30	0.511	0.94	0.429	3.7409	0.1147
31 to 40	0.417	1.09	0.673	3.8699	0.1739
41 to 55	0.458	1.40	0.942	3.9647	0.2376
56 to 70	0.574	1.54	0.966	4.0173	0.2405
71 to 100	0.634	1.65	1.070	4.1214	0.2596
101 to 148	0.715	1.82	1.105	4.0546	0.2725
149 to 432	0.727	2.00	1.273	4.2162	0.3019

the state and federal levels to modify toll pricing structures while reserving the arguments on toll revenue needs, proper jurisdictional assignment of NTS costs and rate deaveraging.

While the FCC is delaying end user charges, the BOCs and AT&T may want to develop contingency plans that could include, if justified by cost and demand analysis, a decrease in day rates coupled with increases in evening and night rates, a lengthening of the day peak period coupled with day peak price decreases and increases in short haul traffic coupled with decreases in long haul traffic.

Any one or all of these pricing approaches would:

- Cut day rates (reducing bypass incentives);
- More rationally distribute the contribution per minute of use from all toll customers;
- Reflect the current access fees, which are not time of day sensitive; and
- Resemble the effect of end user charges, at least to the extent that residential customers would pay, as a class, more of the non-traffic sensitive costs; larger residential users would pay proportionately more, while business users would derive economic incentive to continue using the network.

Any attempt to realign the toll rate structure, of course, must be accompanied by elasticity of service demand data to determine the best steps to take.

Access fees

In a major departure from past pricing practices, either intentionally or by oversight, the FCC access charge decision does not call for time of day pricing of carriers' carrier charges. This omission has provoked many people to ask the FCC for changes in the access rate structure in future interstate and intrastate rate applications.

The impact of the FCC decision as it stands, though, is twofold. First, non-peak related carrier charges have a direct and dramatic effect on the efficacy of AT&T's current message toll service rate structure. Second, the current access fee structure raises the related questions of whether access fees should be peak-related and, if so, what the peak is.

To highlight the impact of access fees on AT&T, a comparison of AT&T's night rates to the charges it will pay to the local operating companies under the most recent National Exchange Carrier Assn. (NECA) tariff shows that much of AT&T's traffic—even before considering AT&T's own costs—is not profitable (Table 3). Night rates constitute Monday to Friday and Sunday from 11 p.m. to 8 a.m. and all day Saturday and Sunday until 5 p.m.

Any stimulation of night and weekend calling only serves to reduce AT&T's net operating revenues unless the stimulation is presupposed in access fees determined by the BOC. These and potential future revenue deficiencies must be recovered in day or evening rates. This shift inflates the price of a day call and further aggravates uneconomic bypass since most business toll calling is during the day. One of two solutions is suggested; either peak related access fees or, as previously discussed, changes in the toll rate struture.

Peak related fees

Peak related access fees may not be the panacea for current pricing anomalies because most of the carrier charges are not related to traffic sensitive costs. Five major elements comprise interstate carrier access fees filed by NECA (Table 4).

These charges apply to both originating and terminating minutes of use. Therefore, a 1 minute call would incur an 18.04¢ access fee. When coupled with a 10¢ charge for billing each message, the total access fees for a 1-minute call become 28.04¢.

Billing charges aside, of the 18.04¢, only local transport and switching are truly usage sensitive, and they make up 4.38¢ or almost 25% of the current access charges. So, the non-peak related or NTS costs amount of 13.66¢ per minute of use and they should be recovered in every minute of use, regardless of time of day. Most of the costs of billing should be treated as non-traffic sensitive as well. It is the actual elasticity characteristics that should dictate departures from the 13.66¢ average.

Only a small portion of the carrier charges, then, are usage sensitive and true candidates for peak/off-peak pricing. So it is doubtful in the short run whether peak access fee pricing is worth pursuing and, even if it were, that it could significantly alter the relationship between AT&T's toll rate structure and access fee charges.

The actual difference between peak and off-peak access fee charges also depends on how the peak period is related to actual end offices, the peak period may extend from mid-morning to late evening hours, covering the majority of all carrier access traffic. In this case, peak/off-peak pricing would have little impact on the

Continued on page 144

Table 3
Night interstate toll rates and access fee charges (for 5 minute call)

Toll mileage band	Price	Access fees	Net revenue
1 to 10	$ 0.38	$1.00	$ (0.62)
11 to 22	0.51	1.00	(0.49)
23 to 55	0.64	1.00	(0.36)
56 to 124	0.82	1.00	(0.18)
125 to 292	0.86	1.00	(0.14)
293 to 430	0.91	1.00	(0.09)
431 to 925	0.94	1.00	(0.06)
926 to 1910	0.96	1.00	(0.04)
1911 to 3000	1.08	1.00	0.08
3001 to 4250	1.12	1.00	0.12
4251 to 5150	1.16	1.00	0.16

Note: Although on May 25 the FCC ordered adjustments to access fees and the AT&T message toll service rate structure, these changes do not materially affect the cost-price relationships in this and other tables or the conclusions in this article.

Table 4

	Cents per minute of use
Carrier common line	6.0300
Line termination	0.7900
Local transport (1-8 miles)	1.2100
Local switching	0.9800
Intercept	0.0097
Total	**9.0197**

carrier's access fee prices.

In short, the FCC's decision with respect to non-peak related access fees may be more right than wrong.

However, the question of toll price realignment remains open. The AT&T toll rate day schedule can be put in exactly the opposite perspective as the night rate period schedule. Since access fees comprise a large share of AT&T's costs and because AT&T's own operating costs are fairly insensitive to the distance of a toll call, comparing the price of a 5-minute call, less access fees, should highlight the net revenue available to AT&T to defray its own expenses (Table 5).

Table 5
Day interstate toll rates and Access Fee Charges (for 5-minute call)

Toll mileage band	Price	Access fees	Net revenue
1 to 10	$ .96	$1.00	$0.04
11 to 22	1.28	1.00	0.28
23 to 55	1.60	1.00	0.60
56 to 124	2.05	1.00	1.05
125 to 292	2.14	1.00	1.14
293 to 430	2.27	1.00	1.27
431 to 925	2.34	1.00	1.34
926 to 1910	2.40	1.00	1.40
1911 to 3000	2.70	1.00	1.70
3001 to 4250	2.80	1.00	1.80
4251 to 5150	2.91	1.00	1.91

These characteristics point to the potential requirement to reduce day prices and the contribution above cost in longer haul mileage bands. Bypass potential should not be evaluated only on the basis of NTS cost assignment, but also on the basis of toll rate structure revenues-cost disproportionalities.

Recent attention and energy has not been misdirected to uneconomic bypass and the need to reduce the apportionment of NTS costs to usage sensitive prices. However, the efficacy of current BOC and AT&T toll rate structures has been overlooked in addressing the post-divestiture environment and in dealing with the apparent reluctance of regulators to implement cost shifts to basic exchange rates.

In view of the current regulatory and political climate, the BOCs and AT&T should consider toll rate realignments. This is more than a stop-gap solution to pressing problems but, rather, a legitimate short and long term strategy based on costs, usage characteristics, elasticities and non-peak related access fees.

NTS cost allocations to message toll service are the primary cause of the bypass problem. However, the toll rate structure may be providing further impetus. □

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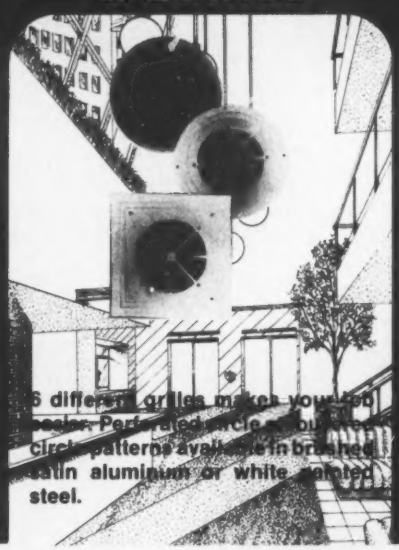
Ceiling Grilles & Baffles

Paging Speaker System



A wide variety of public address, paging, intercom, co-axial and high compliance drivers are available from Oaktron. Wall or corner baffles are available in walnut or blonde finish.

6 different grilles makes your choice easier. Perforated circle and bubble circle patterns available in brushed satin aluminum or white painted steel.

Designed for the telephone interconnect industry, this new speaker assembly is cost effective, ready to install and complete with all hardware. Includes pre-wired transformer with optional volume control.

Intercom Speakers — Level Controls — Transformers — Hitemp Transformers — Top Hats with Plaster Ring — Ceiling Grilles — L-Pads — Wall Mounted Baffles — Ceiling Mounted Baffles.

Besides the wide variety of speakers designed for commercial sound installations, Oaktron has created special units to satisfy almost every need.

165 speaker designs are ready for off-the-shelf delivery. Why not phone today for our all new specification catalog.

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